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the Tumour as opened : In both the Artist has so far employed his Care and Skill, as well in preserving the just Dimensions as in the Colours and Appearances, that I am left only to wish, that in the Description, which I have made, my Pen had not fallen short of his Pencil.—I am, with the greatest Respect,

S I R,

*Your most obliged
humble Servant,*

Jer. Peirce.

V. *An Experiment concerning the Spirit of Coals, being part of a Letter to the Hon. Rob. Boyle, Esq; from the late Rev. John Clayton, D. D. communicated by the Right Rev. Father in God Robert Lord Bishop of Corke to the Right Hon. John Earl of Egmont, F. R. S.*

—**H**AVING seen a Ditch within two Miles from *Wigan* in *Lancashire*, wherein the Water would seemingly burn like Brandy, the Flame of which was so fierce, that several Strangers have boiled Eggs over it ; the People thereabouts indeed affirm, that about 30 Years ago it would have boiled a Piece of Beef ; and that whereas much Rain formerly made it burn much fiercer, now after Rain it would scarce burn at all. It was after a long-con-

tinued Season of Rain that I came to see the Place, and make some Experiments, and found accordingly, that a lighted Paper, though it were waved all over the Ditch, the Water would not take Fire. I then hired a Person to make a Dam in the Ditch, and fling out the Water, in order to try whether the Steam which arose from the Ditch would then take Fire, but found it would not. I still, however, pursued my Experiment, and made him dig deeper; and when he had dug about the Depth of half a Yard, we found a shelly Coal, and the Candle being then put down into the Hole, the Air caught Fire, and continued burning.

I observed that there had formerly been Coal-pits in the same Close of Ground; and I then got some Coal from one of the Pits nearest thereunto, which I distilled in a Retort in an open Fire. At first there came over only *Phlegm*, afterwards a black *Oil*, and then likewise a *Spirit* arose, which I could noways condense, but it forced my Lute, or broke my Glasses. Once, when it had forced the Lute, coming close thereto, in order to try to repair it, I observed that the Spirit which issued out caught Fire at the Flame of the Candle, and continued burning with Violence as it issued out, in a Stream, which I blew out, and lighted again, alternately, for several times. I then had a Mind to try if I could save any of this Spirit, in order to which I took a turbinated Receiver, and putting a Candle to the Pipe of the Receiver whilst the Spirit arose, I observed that it caught Flame, and continued burning at the End of the Pipe, though you could not discern what fed the Flame: I then blew it out, and lighted it again several times; after
which

which I fixed a Bladder, squeezed and void of Air, to the Pipe of the Receiver. The *Oil* and *Phlegm* descended into the Receiver, but the Spirit, still ascending, blew up the Bladder. I then filled a good many Bladders therewith, and might have filled an inconceivable Number more; for the Spirit continued to rise for several Hours, and filled the Bladders almost as fast as a Man could have blown them with his Mouth; and yet the Quantity of Coals I distilled were inconsiderable.

I kept this Spirit in the Bladders a considerable time, and endeavour'd several ways to condense it, but in vain. And when I had a Mind to divert Strangers or Friends, I have frequently taken one of these Bladders, and pricking a Hole therein with a Pin, and compressing gently the Bladder near the Flame of a Candle till it once took Fire, it would then continue flaming till all the Spirit was compressed out of the Bladder; which was the more surprising, because no one could discern any Difference in the Appearance between these Bladders and those which are filled with common Air.

But then I found, that this Spirit must be kept in good thick Bladders, as in those of an Ox, or the like; for if I filled Calves Bladders therewith, it would lose its Inflammability in 24 Hours, though the Bladder became not relax at all.